1. Explain the importance of Data Modeling in Software Engineering

Data modeling is an important step in the process of creating a complex software. It helps developers understand the domain and organize their work.

The importance of Data Modeling can be explained by the following salient features:

1. **Higher quality of Planning**: A lot of projects fail due to premature coding and other decisions. Data Modeling helps in defining the problem, enabling us to consider different approaches and choose the best one.
2. **Clear scope of Development**: Business users can see what the developers are building and compare it with their understanding. Models promote consensus among developers, customers and other stakeholders.
3. **Improved Documentation:** most application vendors today, can provide a data model of their application upon request. That is because the IT industry recognizes that models are effective at conveying important abstractions and ideas in a concise and understandable manner.
4. **Less application errors**: A data model causes participants to crisply define concepts and resolve confusion. As a result, application development starts with a clear vision.
5. **Less Data errors**: lets you leverage database features that improve data quality. Developers can weave constraints into the fabric of a model and the resulting database.
6. SRS Documentation of Railway Tracking System

OBJECTIVE

To develop a software for railway tracking system with various functional and non-functional properties:  
 1. Enquiry Services  
 2. Ticket generation  
 3. Ticket cancellation

INTRODUCTION

Following are the purposes and features of this software:  
 1. Reservation for confirmed and Waiting List  
 2. Online Booking services  
 3. PNR Generation

TECHNOLOGY USED

1. Hardware Requirement:  
    a) PC or Laptop  
    b) CPU- Intel Core 2 DUO E7 Series  
    c) RAM- 512MB( minimum)  
    d) Hard Disk- 60GB
2. Operating Environment:  
    a) Windows 7, 8, 10

INTENDED AUDIENCE

1. Developers
2. Customers
3. Passengers
4. Clerk
5. Admin

OPERATIONS

1. Any Reservation counter from 8 am to 8 pm.
2. Prior to 90 days of Journey.
3. One form for 6 persons only.
4. To save time & queues Agent is others guides.

PRODUCT FUNCTION

* It tells the short note about the product.

TRAIN DETAILS

* Customers may view the train timing at a date their name and number of tickets.
* Passengers operated Enquiry Terminals.

**PERFORMANCE REQUIREMENTS**

* 1. It is available during all 24 hours.
  2. Offered through Mail express, super-fast, Rajdhani & Shatabdi Trains.
  3. About 1520 Trains runs daily.

Variety of compartments based on comfort:

* 1. AC first class.
  2. AC sleeper.
  3. First class.
  4. AC three tier.
  5. AC chair car.
  6. Sleeper class
  7. Ordinary chair car.

Types of concerns & complexities:

* 1. 44 types of quotas.
  2. 8 types of trains.
  3. 9 types of classes.
  4. 162 types of concessions.
  5. 127 types of bogies

SOFTWARE SYSTEM ATTRIBUTES:

* 1. Reliable
  2. Available
  3. Secure

DOCUMENT APPROVAL

The bill passed on any proposals related to railway management needs approval of Ministry of railway department.